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(54) Title: MOLDABLE COMPOSITE ARTICLE

(57) **Abstract:** The present invention relates to moldable composite articles, and particularly to a molded nonwoven fibrous article, and specifically to an automobile headliner that has improved physical properties at low weight. There is a need to minimize the weight of the headliner and the critical parameter is minimum sag. For a molded non-needlepunched batt in the weight range of 1000 to 1200 grams per square meter (gsm), the sag at 91°C must be less than 10 mm, when cantilevering a distance of 28cm. The stiffness, strength and toughness of the batt should be greater than 2 N/mm, 17N and 70% respectively. In the first embodiment, the thermoplastic binder is a bicomponent fiber with an adhesion promoted polyolefin sheath and a polyester core. In the second embodiment, the matrix fiber is a synthetic fiber with a modulus greater than 10 cN/tex. In the third embodiment the matrix fiber is a natural fiber. In the fourth embodiment the bicomponent fiber contains a filler such as carbon black or titanium dioxide.



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